A New Cauliflorous Species of *Dioclea* Kunth (Leguminosae: Phaseoleae) from Southeastern Brazil

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ABSTRACT. A new species of *Dioclea* sect. *Pachylobium* is described under the name of *Dioclea grandistipula* L. P. Queiroz. Although related to *Dioclea rufescens* Bentham, this new taxon is distinguished from other species of *Dioclea* by its cauliflorous pendulous inflorescences and large peltate stipules. It is endemic to the Atlantic forest of the State of São Paulo (southeastern Brazil) and was found during a recent survey for the *Fanerogamic Flora of São Paulo* at the Ecological Station Juréia-Itatins.

Dioclea Kunth is a genus of over 30 species of lianas and shrubs distributed mainly in the Neotropics (Maxwell, 1969). While preparing an account of *Dioclea* for the *Fanerogamic Flora of São Paulo*, five described species were found: *D. glabra* Bentham, *D. rufescens* Bentham, *D. violacea* Martius ex Bentham, *D. virgata* (Richard) Amshoff, and *D. wilsonii* Standley. In addition to these taxa, the following new species was identified.

Dioclea grandistipula L. P. Queiroz, sp. nov. TYPE: Brazil. São Paulo: Iguape, Estação Ecológica Juréia-Itatins, Serra da Juréia, caminho do Imperador, 12 Apr. 1994 (fl), *I. Cordeiro & E. A. Anunciação 1360* (holotype, SP; isotype, HUEFS). Figure 1.

Liana stipulis magnis, peltatis, foliolis oblongis, caudatis, glabriusculis, pedunculis gracilibus, pendulis, caulifloris, petalis albis, antheris dimorphis, discis intrastaminalibus integris marginibus lobatis, fructibus semidehiscentibus, seminibus hilis linearibus. *D. rufescenti* affinis sed stipulis stipellisque longioribus, foliolis glabriusculis et inflorescentiis pendulis, caulifloris differt.

Liana, young branches glabrous to glabrescent, finely striated. *Stipules* persistent, peltate, lanceolate, glabrous, with prominent veins, distal portion acuminate, 1.5–2.1 × 0.6–0.9 cm, proximal portion unequilaterally bifid, 0.6–1.1 × 0.5–0.8 cm. *Leaves* pinnately trifoliolate, petiole and rachis glabrous to glabrescent, petiole 6.9–9.4 cm, rachis 1.4–2.5 cm, stipels longer than petiolule, the proximal linear, 10–13 × 0.6–0.8 mm, the distal subulate, 5–6 mm; petiolules 4–5 mm; leaflets papyraceous, 2–2.5× longer than broad, 7–9 pairs of secondary veins, prominent on both surfaces, minor venation reticulate, upper surface glabrous, lower surface glabrescent but sparsely fuscous-sericeous on main veins, terminal leaflet 9.5–12.5 × 4.5–5.3 cm, obovate to elliptic, caudate and aristate at apex, rounded at base; lateral leaflets 9.6–12.6 × 4.5–5.3 cm, slightly oblique. *Inflorescence* cauliflorous with solitary or 2–3-fasciculate nodose pseudoracemes, 15–36 cm, flowering along ¼–½ of its length, slender, flexuous, pendulous, densely sericeous, canescent; peduncle with lanceolate, peltate, paired sterile bracts, similar to the stipules, to half of its length; nodes capitate, sessile, 1–2 mm across; first-order bracts (at node attachment) ca. 5 × 1.5 mm, caducous, membranous, lanceolate, acuminate, with a basal tuft of canescent hairs, remainder glabrous to sparsely fuscous-sericeous; second-order bracts (at pedicel attachment) ca. 1.8 × 1.5 mm, caducous, suborbicular, fuscous-velutinous; bracteoles ca. 2.5 × 2.1 mm, semi-persistent, suborbicular, fuscous-velutinous; pedicels 2.5–3 mm, fuscous-velutinous. *Calyx* fleshy, 4-lobed, tube 6–7 mm, campanulate, upper margin gibbous, sparsely fuscous-sericeous; upper lobe 3 × 7 mm, deeply emarginate; lateral lobes 3 × 5 mm, ovate; lower lobe 6 × 5 mm, ovate, upcurved, keeled; petals glabrous, claws 5–7 mm; standard 1.3–1.5 × 1.2–1.4 cm, white with wine-colored lines and yellowish target spot, reflexed, flabellate to suborbicular, 2-callose, base 2-plicate-auriculate; wings 1.3–1.5 × 0.7–1 cm, white, obovate, slightly auriculate at base; keel petals 7–9 × 9–10 mm, white, triangular, strongly incurved, vexillary margin with a median lobe, slightly auriculate at base, apex extended in a rounded to truncate beak; androecium pseudomonadelphous, the vexillary stamen free at base by a length of ca. 3 mm; staminal sheath 1.2–1.3 cm, fleshy, glabrous to sparsely pubescent at base, filaments free at apex by a length of 3–4 mm; anthers dimorphic, 5 fertile and

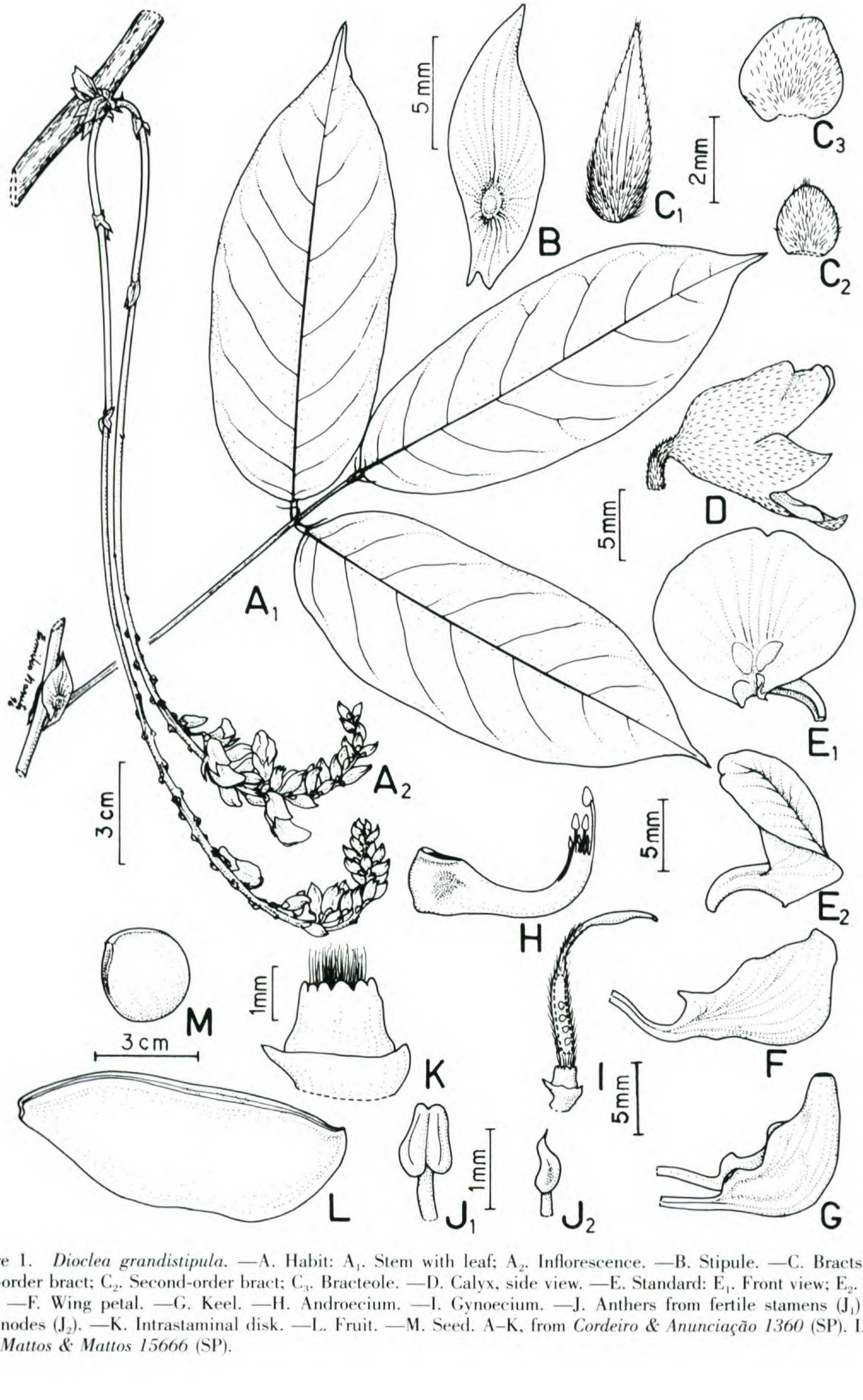

Figure 1. *Dioclea grandistipula.* —A. Habit: A_1. Stem with leaf; A_2. Inflorescence. —B. Stipule. —C. Bracts: C_1. First-order bract; C_2. Second-order bract; C_3. Bracteole. —D. Calyx, side view. —E. Standard: E_1. Front view; E_2. Side view. —F. Wing petal. —G. Keel. —H. Androecium. —I. Gynoecium. —J. Anthers from fertile stamens (J_1) and staminodes (J_2). —K. Intrastaminal disk. —L. Fruit. —M. Seed. A–K, from *Cordeiro & Anunciação 1360* (SP). L, M, from *Mattos & Mattos 15666* (SP).

ovate alternating with 5 sterile and triangular; intrastaminal disk cylindrical with 10-lobed margin; ovary 9–10 mm, subsessile, densely canescent-velutinous, 4-ovulate; style 6–6.5 mm, glabrous, curved, bulbous; stigma truncate. *Fruit* partially dehiscent, opening by the lower suture but not releasing seeds, 8.9–9.5 × 3.7–3.9 × 1.6–2 cm, oblong, margins slightly constricted between seeds, upper suture raised, flanked by two wings, 3 mm wide; valves woody, fuscous-velutinous, glabrescent at maturity, slightly constricted between seeds. *Seeds* 2, ca. 2.7 × 2.4 × 1.4 cm, suborbicular to cuboid, with flat planes of contact, covered with felt-like envelope frequently adhering to the hard seed coat; hilum linear, ca. 2 cm, encircling ca. ⅓ of seed circumference.

Dioclea grandistipula is only known from the coast of the State of São Paulo, southeastern Brazil. The peltate stipules, dimorphic anthers, incompletely fused upper lobes of the calyx, partially dehiscent fruits, and seeds with a long linear hilum enable us to include it in section *Pachylobium* Bentham (1859). To my knowledge, it is the only *Dioclea* species from eastern Brazil to present cauliflory; within the genus, cauliflory is recorded only for *D. malacocarpa* Ducke (sect. *Pachylobium*, Ducke, 1922; Maxwell, 1969), and *D. macrocarpa* Huber (sect. *Macrocarpon*; Amshoff, 1939; Maxwell, 1969, 1988), distributed in Amazonia northward to the Guyana plateau and westward to Central America.

Dioclea grandistipula has its closest affinities with *D. rufescens* Bentham, also from southeastern Brazil (States of São Paulo, Minas Gerais, and Rio de Janeiro) but occurring in different vegetation types. While *D. grandistipula* is found in the Atlantic forest near the coast, *D. rufescens* occurs in the semi-deciduous forests of inland plateaus in the states cited.

Dioclea grandistipula may be distinguished from the other southeastern Brazilian species of *Dioclea* by its almost glabrous leaflets, consistently larger stipules and basal stipels (at least 2.1 cm and 1 cm long, respectively), slender, pendulous cauliflorous inflorescences, and white petals. It has been collected in flower in April and May, and in fruit in December.

Paratypes. BRAZIL. **São Paulo:** Iguape, Estação Ecológica Juréia-Itatins, caminho do Imperador, 24 Apr. 1991 (fl), *M. C. H. Mamede, M. R. F. Melo, E. A. Anunciação & M. A. Carvalhaes 423* (SP), 15 May 1991 (fl), *L. Rossi & E. L. M. Catharino 893* (SP); São Sebastião, "Ilha de São Sebastião," 27 Dec. 1972 (fr), *J. Mattos & N. Mattos 15666* (SP).

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